

What is claimed is:

1. A method for generating a digital color standard system for the generation or reproduction of standardized colors, comprising
  - 5 a. Dividing a color spectrum into a plurality of discrete spectral color values with predetermined gaps between at least some of the discrete spectral color values;
  - b. Digitizing the discrete spectral color values; and
  - c. Processing the digitized color values.
- 10 2. The method according to claim 1, wherein at least one of the discrete spectral color values or the digitized discrete color values is equidistant at least over a part of the color spectrum.
3. The method according to claim 1, wherein the discrete spectral color values are  
15 equidistant for each other with respect to the color gamut.
4. The method according to claim 1, wherein the discrete color values or the digitized spectral color values are adapted to a color recording capability of a particular color recording process or a particular color recording device.  
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5. The method according to claim 4, wherein the particular color recording device is selected from the group consisting of an ink jet printer, a rotary printing press and an alternative printing device.
- 25 6. The method according to claim 1, wherein at least one of the discrete spectral color values and the digital color values is adapted to a particular recording substrate.
7. The method according to claim 1, wherein at least one of the discrete spectral color values and the digital color values is adapted to a particular recording material.  
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8. The method according to claim 7, wherein said particular recording material is selected from the group consisting of an ink, toner and an alternative printing component.
- 5 9. The method according to claims 1, wherein particular colors of particular image areas are scanned by means of a spectral measurement device and the particular colors or the spectral color data of the particular colors are assigned to the digitized color values for further processing.
- 10 10. The method according to claim 1, wherein at least one of the discrete spectral color values and the digitized color values is set in a relation to pre-defined light conditions.
- 15 11. The method according to claim 1, wherein the appearance of at least one of a discrete spectral color value and a digitized color value on a particular recording substrate or recording device is set into a relationship to pre-defined light conditions.
- 20 12. The method according to claim 1, wherein at least one of the discrete spectral color values and the digitized color values is represented by means of at least one reflectance curve specified in regular wavelength intervals.
- 25 13. The method according to claim 1, wherein the recording substrate which is to be used is being spectrally measured to provide a recording substrate-specific spectral color data set and at least one of the discrete spectral color values and the digitized color values is adjusted according to said recording substrate-specific spectral color data set.
- 30 14. The method according to claim 1, wherein at least one color of a specimen is spectrally measured and spectral color data is assigned to at least one of a matching discrete spectral color value and a matching digitized color value.

15. The method according to claim 1, wherein the digitized color values are collected to provide a digital color book of at least one chromaticity.
- 5 16. The method according to claim 1, wherein said processing includes at least one of the following processing steps: assigning the digitized color values to color values of images, transmitting at least one digitized color value between remote terminals, and printing out at least one digitized color value.
- 10 17. The method according to claim 1, further comprising a data carrier for carrying at least one of said digitized color values.
- 15 18. A computer system for generating a digital color standard system for the generation or reproduction of standardized colors, comprising a processor that is programmed to (i) divide a color spectrum into a plurality of discrete spectral color values with predetermined gaps between at least some of the discrete spectral color values, (ii) digitize the discrete spectral color values; and (iii) process the digitized color values.
- 20 19. The computer system according to claim 18, wherein said digitized color values are stored in memory associated with the processor and are accessible through a data network.
- 25 20. The computer system according to claim 18, wherein said digitized color values are stored in memory associated with the processor in the form of at least one digital color swatch.
21. The computer system according to claim 18, wherein color recording characteristics data of a plurality of recording substrates are stored in the memory associated with said processor and are accessible through a data network.
- 30 22. The computer system according to claim 18, wherein the processor can be accessed in order to combine a standard digital color swatch book or digital standard color

data with color recording substrate characteristics, to generate color reproduction simulation data.

- 5 23. The computer system according to claim 18, wherein color reproduction characteristics data for a plurality of color materials are stored in memory associated with the processor to be accessed through a data network in order to retrieve data.
- 10 24. The computer system according to claim 23, wherein said plurality of color materials are selected from the group consisting of ink, toner and an alternative printing component.
- 15 25. The computer system according to claim 18, wherein at least two of the following kinds of data can be accessed or combined by the processor:
- digital standard color swatch book data or digital standard color data;
  - color recording characteristics data for recording substrates;
  - color reproduction characteristics data for color materials;
  - color appearance characteristics data for various color reproducing processes;
- in order to achieve particular color reproduction simulation data.
- 20 26. The computer system according to claim 25, wherein said color reproducing processes include various printing processes, electro-photographical color copying processes and screens.
- 25 27. The computer system according to claim 18, wherein color reproduction simulation data can be browsed by a remote terminal.
- 30 28. The computer system according to claim 18, wherein color recording characteristics data for recording substrates, color reproduction characteristics data for color materials, or color appearance characteristics data for various color reproducing processes can be transmitted to a data carrier or device to be stored, in order to be accessible or combinable by remote terminals, to achieve particular color reproduction simulation data.

29. A data carrier comprising:

a device that is adapted to receive color data that is selected from the group consisting of color recording characteristics data for recording substrates, color reproduction characteristics data for color materials, color appearance characteristics data for various color reproducing processes, and combinations thereof,

wherein said color data is generated by: (i) dividing a color spectrum into a plurality of discrete spectral color values with predetermined gaps between at least some of the discrete spectral color values, (ii) digitizing the discrete spectral color values; and (iii) processing the digitized color values.